

**GOVERNMENT OF ANDHRA PRADESH
ABSTRACT**

Support on ensuring safe use of glass in buildings through appropriate Building bye-laws – Guidelines – Issued

MUNICIPAL ADMINISTRATION & URBAN DEVELOPMENT (M1) DEPARTMENT

G.O.Ms.No.205

Dated 27.02.2009
Read the following:

1. From the representation of Convener, Confederation of Construction Products & Services (CCPS), New Delhi Dated 07.04.2008 & 07.08.2008
2. From The DTCP, Lr.Roc.No.7049/2008/A, Dt:21.08.2008.
3. From G H M C, Lr.No.2378/HNC/TPS/G H M C/2008. Dated: 31.12.2008.

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ORDER:

In the modern lifestyle, increased glass use in buildings offers many advantages; those who spend more time indoors have intuitively understood benefits of improved daylight and vision on human psychology and health. Recent research findings underscore these indisputably. However, this increased use of glass in Indian buildings is not without risks. Wrong selection of glass type is widespread and does result in increased heat gain/loss in buildings and the higher risk of injuries to humans. Further, safety glazing (glass) is required by the International Residential Code (IRC) in a number of locations and is intended to reduce the potential for injury in the event of accidental impact with the glass. The placement of safety glass is in areas that are more likely for people to fall into on or through. Examples include glass in or near to doorways, bathtubs, sliding doors, and near the floor.

2. The two most common types of safety glazing are tempered and laminated. Tempered is the most common type of safety glass used in residential applications because it far less expensive than laminated glass. It has a higher tolerance to impact without breaking. Further, when tempered glass does break, the entire pane of glass crumbles into large granules that resemble large pieces of rock salt. Crumbled glass is less likely to cause serious injury than the shards that result from broken annealed glass. The safety glazing is required, where people are at risk from colliding with glass windows etc, where the glass should be robust enough not to break or be constructed of safety glass, or have suitable guarding. Large sheets of glazing needs to be made obvious so that people do not collide with it.

3. The Confederation of Construction Products and Services (CCPS), in their representation 1st read above have represented that which is a non profit organization took the lead and has prepared the "Guidelines on use of Glass in Buildings part A: Human Safety". The Government organizations like CPWD, NBCC were also involved in the consensus process while preparation of the guidelines. The CCPS has therefore requested this department to issue instructions to the concerned authorities in the public interest and to help in minimizing glass usage and to avoid human risk and ensure safety while using glass in the buildings and to take necessary steps to include the guidelines in the NBCC for better adoption.

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4. The DTCP, Hyderabad and the Commissioner & Special Officer, Greater Hyderabad Municipal Corporation, Hyderabad in their proposals 2nd & 3rd read above have supported the proposals and requested the Government to put certain conditions and issue guidelines on usage of glass in buildings and to ensure human safety.

5. Government after careful examination of the matter and taking into consideration of the recommendations made by the Confederation of Construction Products & Services (CCPS), New Delhi and the proposals submitted by the DTCP, Hyderabad and Commissioner & Special Officer, Greater Hyderabad Municipal Corporation, Hyderabad and also in order to ensure Human Safety and public interest and to minimize the usage of glass and to avoid human risk and ensure safety while using glass in the buildings, hereby issue guidelines and conditions on usage of glass in buildings particularly in commercial complexes, multiplex and multistoried buildings as follows:

1. Safety glazing material shall be used where
 - a) Any glazing is within 1.5. metre above the floor level of building,
 - b) There is danger of falling infill glass materials from overhead glazing and
 - c) There is danger of falling due to change in floor level in case of balustrades, stairs and floors.
2. Necessary precautions should be taken to enhance a person's awareness of the presence of glass by making glass visible and to minimize manual handling of large pieces of glass during installation.
3. Any glass with sill height 0.75m or with Residual Protection type of glass shall be used as vertical walls.
4. Safety glass of no risk of fall (Falling height $\leq 1.5\text{m}$) and still height $< 0.75\text{m}$ shall be used as vertical walls.
5. Safety glass of risk of fall (Falling height $\geq 1.5\text{m}$) and still height $< 0.75\text{m}$ shall be used as vertical walls.
6. Laminated Safety glass shall be used in Horizontal or sloped glazing and as a balustrade, parapet or a railing.
7. Toughened(Tempered) Glass or Laminated Safety Glass, subject to meeting the Definitions and Test standards as outlined in the IS 2553 (part I) and the Guidelines on use of Glass in Buildings
8. Part A: Human Safety" prepared by CCPS, shall be used in the building.
9. Windows, skylights and ventilators over two metres high, shall have controls, limiters and safe access for cleaning on both sides.

10. In case of external laminated glass facades, open able portions shall be left at regular distances as required for fire fighting and smoke exhaust
11. Laminated glass with both glass panes toughened will not classify as safety glass.
12. Clear glass panels capable of being mistaken for an unimpeded path of travel shall be marked to make them visible by incorporating manifestation as mentioned in the CCPS guidelines.
13. All Safety Glass should be ISI marked along with the name or logo to identify the manufacturer of the safety glass.

6. All the Commissioners of Municipalities / Corporations and Urban Development Authorities and Metropolitan Commissioner, Hyderabad Metropolitan Development Authority, Hyderabad are requested to follow and ensure the above guidelines and conditions whenever permissions are accorded for usage of glass in buildings particularly commercial complexes, multiplex and multistoried buildings and ensure the quality of Glass with the stand set complies in the standards as required by the International Residential Code (IRC) and to make the building owner and the Engineer/Architect shall be responsible for ensuring the use of glass complies with the standards and to insist for a joint certification of the building owner and the licensed Engineer/ Registered Architect to the effect that the usage of Glass in the Building is done properly according to the standards of the International Residential Code (IRC) and Guidelines on use of Glass in Buildings and as specified in the guidelines and code of practice issued by Government of India or other agencies from time to time.

(BY ORDER AND IN THE NAME OF THE GOVERNOR OF ANDHRA PRADESH)

**Dr C.V.S.K. SARMA,
PRINCIPAL SECRETARY TO GOVERNMENT**

To

All the Municipal Commissioners in the State (through C&DMA, A.P. Hyderabad).

The Commissioner & Director of Municipal Administration, A.P. Hyderabad.

The Commissioner & Special Officer, Greater Hyderabad Municipal Corporation, Hyderabad.

The Metropolitan Commissioner, Hyderabad Metropolitan Development Authority, Hyderabad.

The All Vice Chairmen's of Urban Development Authorities in the State.

The All Commissioners of Municipal Corporations in the State.

The Director of Town & Country Planning, Hyderabad.

Copy to:

The Convener, Confederation of Construction Products & Services (CCPS), New Delhi.

The PS to Special Secretary to CM / M (MA)/ Prl. Secretary / Secretary (MA&UD)

Sf/Sc.

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SECTION OFFICER